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(54) **LOCATION INFORMATION SYSTEM FOR A WIRELESS COMMUNICATION DEVICE AND METHOD THEREFOR**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

3,906,166 A * 9/1975 Cooper et al. 455/437
5,305,370 A * 4/1994 Kearns et al. 379/45

(List continued on next page.)

OTHER PUBLICATIONS

Executive Summary, Department of Revenue of Washington State, USA "Enhanced 911 Funding Study," http://dor.wa.gov/pub/e911/execsum.htm (8 pages).

Introduction, Department of Revenue of Washington State, USA "Enhanced 911 Funding Study," http://dor.wa.gov/pub/e911/intro.htm (2 pages).

Chapter 1—Background of Wireless E911 in Washington State 1–1, Department of Revenue of Washington State, USA "Enhanced 911 Funding Study," http://dor.wa.gov/pub/e911/chapter1.htm (9 pages).

Chapter 2—E911 Wireless Technology 2–1, Department of Revenue of Washington State, USA "Enhanced 911 Funding Study," http://dor.wa.gov/pub/e911/chapter2.htm (9 pages with 27 pages of slides).

Chapter 3—Technical Components for Phase I and Phase II 3–1, Department of Revenue of Washington State, USA "Enhanced 911 Funding Study," http://dor.wa.gov/pub/e911/chapter1.htm (4 pages with 2 pages of chart).

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(57) **ABSTRACT**

A location information system **(102)** includes a controller **(200)**, a location entry device **(202)**, a memory device **(204)** and wireless communication units **(206–209)**. The controller **(200)** receives location information from the location entry device **(202)**, such as a keyboard or a global positioning satellite receiver, for storage in the memory device **(204)**. The location information represents locations of predetermined areas **(210–213)**, such as floors, rooms, hallways, stairways and elevators, associated with each of the wireless communication units **(206–209)** in a facility **(110)**. A wireless communication unit **(209)** sends the location information to a wireless communication device **(104)**, such as a cellular telephone device, over a short-range wireless communication channel **(124)**, such as a radio frequency communication channel. Preferably, each of the wireless communication units **(206–209)** and the wireless communication device **(104)** include a short-range radio frequency transceiver designed to communicate over the short-range wireless communication channel **(124)** according to a Bluetooth technology specification. Preferably, the location information is used for E911 automatic location identification in the facility **(110)**. The location information may be solicited or unsolicited from the location information system by the wireless communication device **(104)**. When the location information is solicited, the location information is either pulled by the wireless communication device **(104)** or pushed by the location information system using a location information service.

19 Claims, 10 Drawing Sheets